

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of the claims in the application:

1. (Currently Amended) A robust, hardy, vigorous tomato variety adapted for growth on a commercial scale, homozygous for the dg mutation, wherein tomatoes grown from this variety have an average lycopene content of at least 200 ppm plus or minus the standard error from the mean two fold its average content in currently available varieties, while being devoid of deleterious traits associated with the dg mutation, when measured at peak lycopene content.

2. (Original) The variety of claim 1, wherein the variety is a stable parent line.

3. (Currently Amended) The variety of claim 1, wherein the variety is a hybrid, said hybrid is homozygous for the dg mutation, further wherein tomatoes grown from said hybrid have an average lycopene content of at least 200 ppm plus or minus the standard error from the mean, while being devoid of deleterious traits associated with the dg mutation, when measured at peak lycopene content.

4. (Canceled).

5. (Previously Presented) The variety of claim 1 which is devoid of dg-linked deleterious traits selected from the group consisting of poor germination rate, shallow root system, brittle stems, thin and/or fragile leaves, premature defoliation, low yield, and small fruit.

6. (Canceled).

7. (Currently Amended) The variety of claim [[6]] 1 designated HA3518, a sample of the seed of this variety having been deposited with the American Type Culture Collection under designation No. PTA-5796.

8. (Currently Amended) A seed of a robust, hardy, vigorous tomato variety adapted for growth on a commercial scale, homozygous for the dg mutation, wherein tomatoes grown from this variety have an average lycopene content of at least 200 ppm plus or minus the standard error from the mean ~~two-fold its average content in currently available varieties~~, while being devoid of deleterious traits associated with the dg mutation, when measured at peak lycopene content.

9. (Previously Presented) The seed of claim 8, wherein the variety is a stable parent line.

10. (Currently Amended) The seed of claim 8 wherein the variety is a hybrid, said hybrid is homozygous for the dg mutation, further wherein tomatoes grown from said hybrid have an average lycopene content of at least 200 ppm plus or minus the standard error from the mean, while being devoid of deleterious traits associated with the dg mutation, when measured at peak lycopene content.

11. (Canceled).

12. (Previously Presented) The seed of claim 8 which is devoid of dg-linked deleterious traits selected from the group consisting of poor germination rate, shallow root system, brittle stems, thin and/or fragile leaves, premature defoliation, low yield and small fruit.

13. (Canceled).

14. (Currently Amended) The seed of claim [[13]] 10 designated HA3518, a sample of the seed of this variety having been deposited with the American Type Culture Collection under designation No. PTA-5796.

15. (Currently Amended) A tomato plant, or part thereof, produced by growing the seed of claim 8, wherein said tomato plant retains all the morphological and physiological characteristics of the hybrid HA3518.

16. (Original) Pollen of the plant of claim 15.
17. (Original) An ovule of the plant of claim 15.
18. (Currently Amended) The plant of claim 15 further comprising an additional trait consisting of herbicide resistance, insect resistance, resistance to bacterial, fungal or viral disease, and male sterility ~~and improved nutritional value~~.
19. (Original) The plant of claim 15 further comprising an additional trait selected from at least one type of disease resistance and at least one type of stress resistance.
20. (Original) The plant of claim 15 further comprising an additional trait introduced by genetic transformation.
21. (Original) The plant of claim 18 further comprising an additional trait introduced by genetic transformation.
22. (Currently Amended) The tomato plant, or part parts thereof, of claim 15, wherein the plant or parts thereof have been transformed so that its genomic material contains one or more transgenes operably linked to one or more regulatory elements.
23. (Original) The tomato plant, or part thereof, of claim 18, wherein the plant or parts thereof have been transformed so that its genomic material contains one or more transgenes operably linked to one or more regulatory elements.
24. (Currently Amended) A tissue culture of regenerable cells of [[a]] the tomato plant of claim 15.
25. (Currently Amended) [[A]] The tissue culture according to claim 24, comprising cells or protoplasts from a tissue selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, flowers, fruit and seeds.

26. (Original) The tissue culture of regenerable cells of claim 24, wherein the tissue regenerates plants capable of expressing all the morphological and physiological characteristics of the hybrid HA3518, a sample of a seed of said variety having been deposited with the American Type Culture Collection under designation No. PTA-5796.

27. (Original) A tomato plant regenerated from the tissue culture of claim 24, capable of expressing all the morphological and physiological characteristics of the hybrid HA3518, a sample of a seed of said variety having been deposited with the American Type Culture Collection under designation No. PTA-5796.

28. (Currently Amended) A method for producing a hybrid tomato seed homozygous for the dg mutation, said method comprising crossing a first parent tomato plant characterized by homozygosity for the dg mutation, with a second parent tomato plant comprising a mixture of commercial breeding material and harvesting the resultant hybrid F₁ seed, ~~wherein at least one of the first or the second parent tomato plant is a variety according to claim 2.~~

29. (Currently Amended) A hybrid tomato seed produced by the method of claim 28, wherein said seed retains all the morphological and physiological characteristics of the hybrid HA3518.

30. (Currently Amended) A hybrid tomato plant, or parts thereof, produced by growing the hybrid tomato seed of claim 29, wherein said tomato plant retains all the morphological and physiological characteristics of the hybrid HA3518.

31. (Original) Tomato seed produced by growing the hybrid tomato plant of claim 30.

32. (Currently Amended) A method of producing a tomato plant derived from [[a]] the hybrid tomato variety according to claim 3, comprising:

- a. crossing a first plant that is [[a]] the hybrid plant homozygous for the dg mutation according to the present invention claim 3 with a second tomato

- plant comprising a mixture of commercial breeding material to yield first progeny seeds;
- b. growing the first progeny seed under suitable plant growth conditions to yield an F₁ tomato plant of the first hybrid plant, said F₁ tomato plant is homozygous for the dg mutation, wherein tomatoes grown from this plant have an average lycopene content of at least 200 ppm plus or minus the standard error from the mean, while being devoid of deleterious traits associated with the dg mutation, when measured at peak lycopene content.; optionally
 - c. crossing the plant obtained in step (b) with itself or with a third tomato plant to yield second progeny seeds derived from said first hybrid plant;
 - d. growing the second progeny seed under suitable plant growth conditions to yield additional tomato plant derived of said first hybrid plant; and further optionally
 - e. repeating the steps of crossing and growing from 1 to 5 or more times to generate further tomato plants derived from said first hybrid plant.
33. (Canceled).
34. (Currently Amended) The method of claim ~~[[33]]~~ 32, wherein the hybrid variety is HA3518, a sample of a seed of said variety having been deposited with the American Type Culture Collection under designation No. PTA-5796.
35. (Currently Amended) A method for producing a tomato plant that contains in its genetic material at least one transgene, comprising crossing ~~the said~~ tomato plant comprising an additional trait introduced by genetic transformation, of claim 20 with either a second plant of another tomato variety or ~~[[a]]~~ with the non-transformed tomato plant according to claim 1, so that the genetic material of the progeny that results from the cross contains the at least one transgene operably linked to a regulatory element.

36. (Original) A tomato plant, or part thereof, produced by the method of claim 35.

37. (Currently Amended) [[A]] The tomato plant according to claim 15 further comprising a single ~~trait-gene~~ conversion, said plant is homozygous for the dg mutation, further wherein tomatoes grown from this plant have an average lycopene content of at least 200 ppm plus or minus the standard error from the mean, while being devoid of deleterious traits associated with the dg mutation, when measured at peak lycopene content, further wherein said plant retains all of the morphological and physiological characteristics of the hybrid HA3518.38.

38. (Currently Amended) The tomato plant of claim 37, wherein the single gene confers a characteristic selected from the group consisting of herbicide resistance, insect resistance, resistance to bacterial, fungal or viral disease, male sterility.

39. (New) The variety of claim 1, wherein the average crop yield of said variety is at least 9 kg/ m².

40. (New) The variety of claim 1, wherein the average crop yield of said variety is between about 9 kg/ m² and about 12.7 kg/ m².

41. (New) The variety of claim 1, wherein the fruit of said variety has an average Brix value of about 4.5.

42. (New) The method of claim 28, wherein at least one of the first or the second parent tomato plant is the variety according to claim 2.